

Discussion – Quality Assurance in Statistics Education

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The papers in this session address several important aspects of what is needed to maintain and improve quality in statistics education. Abbas Bazargan leads off by discussing the ever-accelerating treadmill that we all seem to be chained to whereby we are constantly being expected to do more with less. He then moves on to discuss quality assessment of departments and programmes to maintain or improve standards in the face of such pressures. Brenton Dansie discusses the notion of “graduate attributes”, aligning our teaching with graduate attributes and some of the opportunities these open up for statistics teaching. Helen MacGillivray discusses principles and examples for assessment of students. Assessment is one of the most important factors influencing the quality of student learning.

I am not sure that you will have to introduce structures like the ones Abbas describes yourselves. I think they will be imposed on you. For many of us they already have. As higher education has become a bigger part of national budgets, governments worry more and more about what they are getting for their money and institute “accountability” processes. This, or the fear of it, then pushes accountability processes all the way down the system. External reviews and other forms of quality assurance are here to stay and are multiplying. I have served on several such reviews. There has been a standard pattern – self assessment materials, submissions from “stakeholders”, several days of interviews from which the review panel writes a report of comment and recommendations for change.

These things are quite useful and positive for all concerned provided members of the review panel see themselves more as “coaches” than “judges” but they are certainly no cure-all. What can we realistically hope to get out of a process like this? Everything is done at a high level and there is no time for the systematic appraisal of details. Such reviews can pick up major structural problems, big gaps in programmes, some blind spots, and personnel and resource problems. They will bump into some problems at detailed level but it will be a small percentage because those details that come to notice do so by a haphazard process. In a teaching environment the quality that matters most is what is happening inside the classroom. Very few quality assessments will ever reach down that far – it would simply be far too expensive to do so. Also the reviewers can never be a hundred percent certain of getting it right. Those being reviewed typically know much, much more about their own operating environment than do those on the review panel.

We need ways of working that put quality improvement at core of everyday teaching practice, not as an add-on process. We are too stretched for time to operate add-on processes without adversely affecting core business. There are some quality improvement models along these lines in operation at Auckland. Wild (1995) contains an early account but we have stepped back from a quite a bit of what is described there because it did incorporate some time-consuming add-on processes.

Standards, quality assurance, scientific research-informed approaches to teaching – we do need to have these things. And more is better, right? Actually, it is not that simple. We all operate in an environment that is rapidly changing and very competitive. To prosper we also have to be entrepreneurial. And how do entrepreneurs operate? They seize opportunities before others wake up to them. They are risk takers who back their intuition. They are early adopters. They do not wait until all the research is in, until all the answers are clear to everyone. We have to recognise that

“standards”, quality assurance and being “research based” on the one hand versus being entrepreneurial on the other actually pull us in opposing directions. What we all have to find is a balance between them that works in the environment that we operate in. I believe in local solutions – structures and programmes that can survive and prosper in local environments and that exploit local opportunities – in developing good core-values and systems, involving good people, and trusting them. System operating in this way leave those that are more rigid and less sensitive to the realities of their environment far behind.

Let us now turn our attention to “graduate attributes”. This is another two-edged sword. There is much that is good about the move to “graduate attributes” but since Brenton did such a good job with the positives we will begin by accentuating the negative. “Graduate Attributes” are lists of qualities that institutions say can be expected of all graduates of their programmes. Graduates who live up to the attribute lists I have seen don’t need to have an ordinary life and career. They can proceed directly to canonisation. Idealism about what graduates should be like and marketing imperatives lead to lists of qualities that straight-A intellects who are social and moral paragons would struggle to live up to, let alone ordinary human beings who just scrape through their programmes. If we did the research to produce the list of what qualities could actually be guaranteed in all bare-pass graduates from a broad general degree (in contrast to tightly controlled professional programmes) in any institution anywhere we would not be able to bear to look at it. It would simply be too embarrassing.

So we end up with a process where we get lists that are “aspirational” (wish lists that real students cannot live up to) but are unlikely to be too clearly labelled as such. Quality audits now pick up on the lists and ask obvious but embarrassing questions like, “How do you develop these qualities?” and “How do you know you’ve done it successfully?” This in turn leads to a mad scramble actually to deliver what’s in the aspirational list (or plausibly appear to!).

Back to the positive. Lists of graduate attributes focus the attention of educators themselves on big-picture educational goals that are otherwise lost sight of. They help us to uncover important gaps and, as Brenton has shown, statistics education can fill some of these gaps. The whole process should open up good opportunities for entrepreneurial departments to offer well-targeted courses. And the directions that the focus on graduate attributes leads us in are directions most of us want to be going in anyway.

We come now to Helen MacGillivray’s very nice paper on assessing students. I have fewer prejudices to air here, but I applaud Helen’s efforts to find sensible combinations of norm and criterion based assessment and to achieve best practice. I have seen some rather horrible examples of standards-based assessments in our new national qualifications system where people have felt compelled to apply generic patterns to situations where they just do not fit. You simply cannot have sets of descriptors and ways of awarding credit from them that will work everywhere. And no two assessment tasks, even though they might be targeting the same skills and abilities, will ever be exactly equivalent.

I wish to conclude by thanking all of the authors for their very stimulating papers.

REFERENCES

Wild, C.J., “Continuous improvement of teaching: Case Study in a large statistics course”, *International Statistical Review*, **63**, 49-68, 1995.